

Design WHS Tools to Help Designers With WHS

RMIT has developed a prototype knowledge-based web tool to deliver WHS decision support to building/construction designers

Who are we?

A consortium comprising the Centre for Construction WHS (RMIT University), JustSys Pty Ltd and architects Crosier Scott & Associates, which has developed a prototype web tool to help architects and engineers make design-decisions that take account of occupational health and safety. The one-year project was funded by the consortium members and the Information Technology Online (ITOL) Program of the Department of Communications, Information Technology and the Arts.

The issue

There is a growing emphasis on elimination of work health and safety (WHS) hazards through design. In several Australian jurisdictions, specific WHS obligations for designers of buildings have been established in the legislation. A need to provide WHS decision support to building designers was identified.

A prototype decision support tool for design WHS in the building/construction industry was developed. The tool focused on the prevention of falls from height, a major cause of work-related fatalities in the building construction and maintenance sector.

The tool adopted an innovative approach to modelling design WHS knowledge, based upon argumentation theory. Unlike rule-based knowledge-based systems of the past, the argumentation approach is ideally suited to modelling expert knowledge in situations characterised by professional judgement, discretion and contingency (such as design and WHS risk management).

The delivery of expert advice is shown to have considerable potential to improve the efficiency of the design process, improve information flows between parties in the construction supply chain and reduce WHS risks at the source, i.e. in design.

Currently many large architectural and engineering design firms are responding to WHS legislation by developing WHS management tools for in-house use. These are unlikely to be made available to external designers and, if so at a cost that will be prohibitive for small to medium sized design firms (SME). This leaves SME design firms exposed to considerable risk and tools are needed that will be readily available to design professionals.

An online tool

The tool is web-based, allowing SME designers to access the system using a standard browser. Designers engage in a consultation which steps them through the issues they need to consider in assessing the risk of falling from height and makes suggestions as to ways in which this risk can be eliminated or reduced through design modifications. This consultation represents the way an WHS expert would assess and manage this risk, providing access to advice that would otherwise only be available through the employment of an WHS specialist.

The tool has been favourably received by potential user groups. The possible applications for the tool are:

- to provide practical decision support to construction design professionals;
- to support the OHS education and training of designers in the construction industry; and
- to evaluate the OHS risk inherent in the maintenance of existing structures to support the integration of OHS into facilities management.

Contacts

RMIT University

Centre for Construction
Work Health and Safety
GPO Box 2476
Melbourne VIC 3001

Associate Professor Nick Blismas
Tel. +61 3 9925 2230
Email: nick.blismas@rmit.edu.au



Project support

This project was supported by the Australian Government through the Information Technology Online (ITOL) Program of the Department of Communications, Information Technology and the Arts.

www.dcita.gov.au/ie/ITOL

Consortium members

The Centre for Construction WHS at RMIT University is a leader in construction WHS research.

www.rmit.edu.au/pcpm



JustSys has developed a new approach for the rapid development of web based knowledge-based systems. Their successful projects have modelled many forms of discretionary expert knowledge, making them leaders in this field.

www.justsys.com.au



CSA are architects and planners specialising in commercial, residential, medical and educational buildings. They bring extensive design expertise to the development of the 'Design WHS' tool.

www.croscott.com.au

